DOCUMENT RESUME

ED 219 539 CE 033 189

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TITLE Testimony. Subcommittee on Elementary, Secondary & Vocational Education.
PUB DATE 29 Apr 82
NOTE 13p.; Paper presented before the Congressional Subcommittee on Elementary, Secondary, and Vocational Education (Washington, DC, April 19, 1982).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Needs; Educational Planning; Employment Patterns; Federal Aid; Federal Legislation; *Financial Needs; Financial Support; Industrialization; Job Skills; Labor Market; *Labor Needs; Needs Assessment; Position Papers; *Program Development; Public Policy; Skill Development; Trade and Industrial Education; Two Year Colleges; Unemployment; *Vocational Education
IDENTIFIERS *Macomb County Community College MI; Michigan

ABSTRACT

The largest public community college in Michigan, Macomb Community College (MCC), is located in the county that is most closely tied to Michigan's automobile industry. Because of recent high unemployment in the automobile industry, MCC must now expand its occupational offerings to meet the needs of displaced workers who must either gain new skills or upgrade existing ones. Particularly needed in the Macomb County area are programs to provide workers with skills that have become necessary in light of the following recent changes in area industry: increased demands for computer-trained machinists; expanding use of industrial robots, plastics, and electronics components; new interest in alternative energy sources; greater emphasis on health and safety in the workplace; and the beginnings of a movement to expand the role of the community college in apprenticeship training. To accommodate these and other changes in its service area, MCC has developed plans for 15 new programs over the next 3 years, has initiated 10 new programs in the past 2 years, and will modify 16 others this year. If the federal government does not significantly increase vocational funding to Michigan, MCC will not be able to meet the challenges currently facing it. (MN)

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SUBCOMMITTEE ON

ELEMENTARY, SECONDARY & VOCATIONAL EDUCATION

TESTIMONY

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Warren, Michigan
April 29, 1982

ED233189

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Mr. Chairman and Members of the Subcommittee on Elementary, Secondary and Vocational Education --

I am Edward Lynch, Dean of Occupational Education at Macomb Community College, Warren, Michigan. I am very appreciative of this opportunity to identify for you the industrial changes that are occurring within our service area, the impact those changes are having on our vocational education programming, and why I believe the Federal support of Vocational Education must be increased.

THE COLLEGE AND ITS SERVICE AREA

Macomb Community College is a comprehensive, multi-campus, two-year public institution located in Macomb County. With an enrollment of over 30,000 students, it is the largest of the twenty-nine public community colleges in Michigan.

It is the only institution of higher education in the county and serves an area which, over the past 25 years, has experienced phenomenal industrial, commercial, and residential development. It has, however, a less diversified industrial base today than it did in the 1960's.

The boundaries of Macomb County are identical to those of the college district. The county is located in the northeast portion of the Wayne-Oakland-Macomb metropolitan area surrounding the city of Detroit. It has an area of 481 square miles, including twelve home rule cities, three villages, and twelve townships.

Residential, commercial, and industrial development has expanded Macomb County's assessed valuation to over $6.5 billion, its population to 692,000, and its employment population to about 250,000.

It is a highly industrialized county with slightly over 38% of its employment concentrated in manufacturing. Each of the three largest

automobile companies (General Motors, Ford & Chrysler) have major installations here. Together the three employed 40,000 workers in 1981, which was about 3,500 below the previous year. The work force is highly skilled and Macomb County probably has the largest concentration of Tool & Die shops found anywhere in the country. In addition to the "Big Three" automotive companies, the county houses the new production facility of VW of America and its corporate headquarters, as well as the Chrysler Defense operation recently acquired by the General Dynamics Corporation.

Macomb County is also the home of the giant General Motors Tech Complex, several large machine equipment manufacturing companies, including Lamb Technicon, The Cross Mfg. Co., as well as hundreds of job shops.

Of the counties of Metropolitan Detroit, Macomb is the one most closely tied to the automobile industry and, as a result, currently has the highest unemployment rate. In December 1981, the unemployment rate for Macomb County stood at 16.3%.

Macomb Community College offers programming in the traditional liberal arts transfer curriculum, and a very comprehensive offering of occupational programs.

Continuing a trend that began a number of years ago, more students now enroll in our 87 occupational programs than in the liberal arts transfer curriculum. This pattern is being duplicated around the state, where this year 131,000 adults enrolled in occupational programs, representing 51% of the total enrollment in the 29 community colleges.

Macomb Community College has a long tradition of serving the needs of the business, health and industrial communities. Increasingly, they are turning to us for instructional services. We now serve an employer base of over 600, which includes providing related instruction in 40

different trade areas for 1600 apprentices.

Displaced employees are also turning to Macomb Community College for retraining. For example, the college enrolled over 1,200 students last year who were sponsored by the Trade Readjustment Act, and regularly provides CETA training programs in the Technology and Health areas.

Our Educational Base will expand by increasing entry-level occupational training programs and developing programs for retraining/upgrading of current employees, thus adding to the pool of skilled manpower so vital to increased productivity. Macomb Community College will be an integral part of the economic development of this area.

Across the State the 1980-'81 statistics show that 57% of students now entering community colleges are there to prepare for new jobs or improve job skills. (26% of the students enroll in occupational programs, 22% in business programs and 9% in health fields.) In the last three years alone, new courses and programs that now enroll over 11,500 students were developed at Michigan community colleges. Most of those courses and programs would not have been available in the local areas if it were not for the community colleges.

Several factors are causing the community colleges to now further expand their occupational offerings. First, demographics have changed--the 18-24 year old typical job-entry level population is declining. Second, career changes are becoming more and more common for a more mobile work force. Third, the exploding increase in the volume of scientific and technical information has created a demand for constantly upgrading the skills of the currently employed and for retraining displaced employees.

Community Colleges must be viewed as a major educational delivery system for supporting local and statewide economic planning and development. Cooperative efforts between business, industry and the community

college hold promise of improving skill levels for all workers.

Education has indeed evolved to a life-long experience. We have recognized the change. Macomb Community College has a market place orientation. It maintains a close working relationship with the community through a variety of structured interactions, including apprentice programs/cooperative internships, advisory committees, a large adjunct faculty drawn from local businesses and industrial concerns, and a standing offer to tailor instruction and services to meet specific employer needs.

CHANGES IN THE JOB MARKET

Much of Macomb County's industry is related to the manufacture of transportation equipment. Another leading industrial component of our service area is that segment that provides the design and tooling of machinery and equipment with which other manufacturers can produce goods.

The County has a major concentration of skilled trades such as pattern and model makers, millwrights and electricians. Concentrated within 25 miles of Detroit are more tool and die shops than in any other area of the world. Macomb County is located within that 25 mile area.

A number of very significant job changes are taking place in our service areas. Most of these changes are a direct result of industries increased utilization of new technologies. Examples include:

- Machinists have always been in high demand. Today the need is for computer-trained machinists and individuals trained in Numerical Control Technology.
- The expanding use of Robots within the automobile industry requires advanced training for a wide variety of skilled trade areas including welder equipment repairmen, machine repairmen, toolmakers and industrial electricians.

(The Robotics Research Center being created in a unique partnership of State government, industry and other interests, will be located within approximately 50 miles of Macomb County.)

- The increased use of plastics and electronic components in the manufacture of automobiles.
- The increased interest in Solar and other alternative energy sources.
- The use of electronic components in an ever increasing array of applications.
- The introduction of Interactive Computer Graphics into the design field.
- The crossover of construction trained plumber/pipefitter journeymen into the industrial field.
- The first movements away from the single skill area journeyman. Among others, the VW Company of America is developing cross-trained individuals in the four maintenance trades of pipefitter, electronics, millwright and toolmaker. This trend is expected to accelerate.
- The recently renegotiated contract at the automotive companies establishing a special retraining and upgrading fund is a recognition by both the UAW and the auto companies of a need to provide skill upgrading, and for more diversified training.
- Greater emphasis on health and safety within the workplace.
- The growing need for trained technicians working with environmental concerns.
- The beginnings of a movement to expand the community college's role in the training of apprentices. This new interest is in the introduction of hands-on laboratory experiences at the college, in addition to the on-the-job training.
- The downsizing of the automobile.

PROGRAMMING AND OTHER INTERNAL CHANGES AT THE COLLEGE

To accommodate these and other changes in our service area required Macomb Community College to modify and to add new areas of study, to make a significant investment in new equipment and remodeling of the physical plant, and to make other major changes in our operating procedures and administrative organization.

The College has initiated the first steps to obtain state approval for 15 new programs over the next three years. This is on top of 10 new programs introduced within the past two years and the modification of 16 others in the current academic year.

Recent major programming changes include:

- The introduction of a Robotics program with an equipment investment of over $300,000.
- The use of the computer in the design field required a total repackaging of each of our program design areas, an investment of over $400,000 in equipment and remodeling of current facilities. Anticipated demand for hands-on experience in the use of the integrated computer graphics equipment will require the operation of that lab 24 hours a day, seven days a week.
- The introduction of courses in non-destructive technology into our curriculum to accommodate the demand for increased product reliability and safety. The cost for that equipment is in excess of $100,000 with another several thousand for installation and for remodeling.
- The introduction of more and expensive highly sophisticated electronic equipment and instruction into our electronic engineering technology program. This program was completely redesigned about three years ago and requires constant review and frequent modification to remain current with the rapidly changing

technology. The enrollment in the electronics program has more than doubled in the last five years and is projected to double again within the next three years.

- The demand for computer-trained machinists has been on the increase. This year another full-time faculty member was hired and remodeling will take place this summer to increase the space allocated to this program. Both the Metals Machining and the Numerical Control programs are being modified.
- A new program in Solar and Alternate Energy Technology was developed this year to meet the demands from industry. This program will be available to new students and is anticipated to also attract individuals now trained and employed as heating, cooling or refrigeration experts.
- The increased emphasis on quality assurance in manufacturing required the purchase of laser equipment and introduction of its use into our metrology program.
- A considerable expansion of equipment and staff in the Data Processing/Computer Programming curricula along with a significant investment in a new computer and peripheral equipment.
- Development of a program in Word Processing and a significant investment in equipment and remodeling.
- The design of a series of courses in the plastics technology.

In addition to changes in vocational-technical programs, other significant adjustments have been made at the college in order to be positioned to meet the increased challenge for training, retraining and upgrading.

- The increased emphasis on non-traditional, short-term and quick-start programs has extended our class day in a number of

areas to begin as early as 6:00 a.m. and run until midnite. (This month, for example, we entered into a contractual arrangement with the Department of Labor supported Downriver Community Conference to provide Robotics training. In order to accommodate this need, the first group of unemployed students had to be scheduled around our traditional classes. This resulted in programming spread over a long stretch of the day and in some cases runs until midnite.)

- We have designed a Contract Education area for business and industry. Recent efforts in this area include training as routine as introducing a limited-use welding program for the Michigan Bell Telephone Company--to a highly complex program in Metrology Calibration for a group of General Motors Mexican employees (most of whom, while well educated, were not fluent in the English language). It is through this Contract Education effort that this College will arrange to meet the increasing demand for short course and quick start programs. To accommodate this need the college had to make a major internal organizational change.

  The College has assigned one full-time administrator and a number of part-time consultants to work with the VW Company. This unique arrangement is designed to assist in the identification of training needs and development of modules to deliver the training. Members of the consortium include the State of Michigan, Departments of Education and Labor, VW and Macomb Community College.

  The basic skill level of a large percentage of those recently unemployed as a result of changes within the automotive industry is very low. Before they can be retrained in one of the emerging technological areas, they require an upgrading of reading and math skills. To accommodate this need the college is developing a Basic Skills component. This new unit will assess and program

students on an individual basis. (This required a shift of internal resources into this new unit since no new funding is available to support this activity as a continuing effort.)

- There has been significant programming progress made in the close articulation of the College with the 30 secondary schools within our service area. Within the past two years, gains have been made to integrate the advanced secondary school training into the introductory-level college courses, in an effort to accommodate and accelerate the students' program of study. One of the spinoffs of the above effort was the first of what will be several programs across various curriculums to assist in the introduction of high school vocational education faculty to some of the new technology and equipment. We will be assuming a responsibility to work closer with secondary vocational education faculty and programs to ensure a continuing bridge between the two parts of this continum.

PROPOSALS

The Federal government has played a significant and vital role in the support and improvement of vocational education at both the secondary and post-secondary level. To withdraw from this commitment would be disastrous to vocational education. Rather than reduce the level of support it should be greatly increased.

On March 12, 1982, the Michigan Occupational Deans Administrative Council, which consists of the chief vocational-technical education administrator from Michigan's (29) public community colleges, unanimously passed the following resolution regarding a Federal Vocational Education Act:

1. The federal government must pass a vocational education act supporting the economic recovery and growth of states,

particularly Michigan, where the recession has had a debilitating effect.

2. The Act must be a strong commitment on the part of the federal government to assist states in establishing support services for post-secondary vocational-technical education programs.

3. The Act must include incentives for the states to develop training programs needed for re-industrialization, productivity improvements and national defense efforts.

4. The Act must provide funds for needed instructional facilities and modern equipment.

5. The Act must provide funds for individual state efforts, without inhibiting the states from establishing programs required for local training needs.

6. The Act must encourage greater cooperation between post-secondary vocational-technical education and state economic development efforts.

7. The Act must be a strong commitment to and provide for assisting individual states in updating vocational-technical personnel.

Additionally, I recommend consideration of the following points for incorporation in the new Act:

1. Improve the institution's capacity to recruit and hold skilled faculty.

2. Provide incentives to encourage shared training activities and resources between the business and industrial community and post-secondary vocational education units.

3. Provide start-up funds to establish Industrial Training Institutes within occupational units at Community Colleges and Post-secondary Technical Centers. This type institute would be an area focal point to work directly with local industry in training needs and related areas.

4. Equally important, continue to utilize the strong secondary and post-secondary structures now existing in states such as Michigan.

The considerable efforts and the tangible results accredited to vocational-technical education in Michigan would not have been possible without the strong support of the Federal government working cooperatively with Michigan governmental agencies and local educational units.

The very serious financial crisis in Michigan has resulted in a major reduction in state appropriations to support its educational system. If Federal vocational education funds are not increased significantly it will seriously undermine our ability to provide the training and services needed to meet local needs and national needs.

Those individuals requiring training, retraining and upgrading will be unable to obtain it, and Macomb County, Michigan, and the country as a whole will not have the trained personnel required to meet the challenge of the 80's and 90's.

It is projected that ten years from now community colleges will need to provide training in areas unheard of today. We will not be able to meet this challenge without increased support from the Federal Government.

Improved vocational education is Macomb County's business, the State of Michigan's business and the business of the country. We all benefit.

Thank you for the opportunity to share these thoughts on vocational education with you.

by: Edward J. Lynch, Dean
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Macomb Community College